BOGEN®

Classic Series Amplifiers

C35, C60, & C100 Models

Installation and Use Manual

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Notice

Every effort was made to ensure that the information in this guide was complete and accurate at the time of printing. However, information is subject to change.

Important Safety Information

WARNING: To Reduce The Risk of Fire Or Electric Shock, Do Not Expose This Apparatus To Rain Or Moisture.

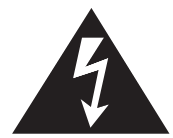
Always follow these basic safety precautions when installing and using the unit:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade, or the third prong, are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

IMPORTANT

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

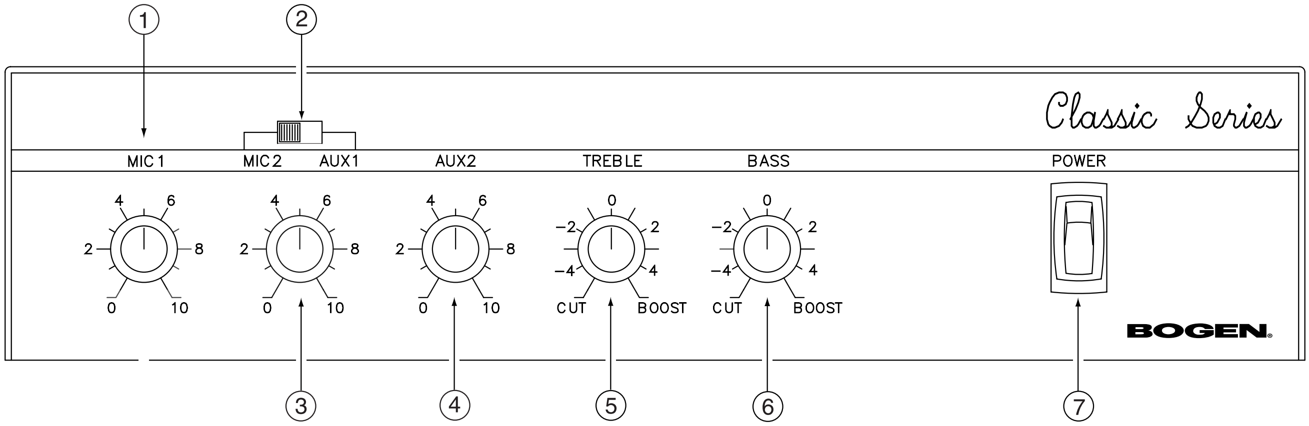


The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Contents

Panel Descriptions

Classic Series Front Panel



1. MIC1 Level Control

Individual level control for a dedicated microphone input.

2. MIC2/AUX1 Mode Switch

Switch selects either the MIC2 or AUX1 connection as the active input.

3. MIC2/AUX1 Level Control

Individual level control for a dedicated microphone input or for an auxiliary input depending on input mode selected.

4. AUX2 Level Control

Individual level control for a dedicated auxiliary input.

5. Treble Control

Controls the amount of cut or boost of treble frequencies above 10 kHz.

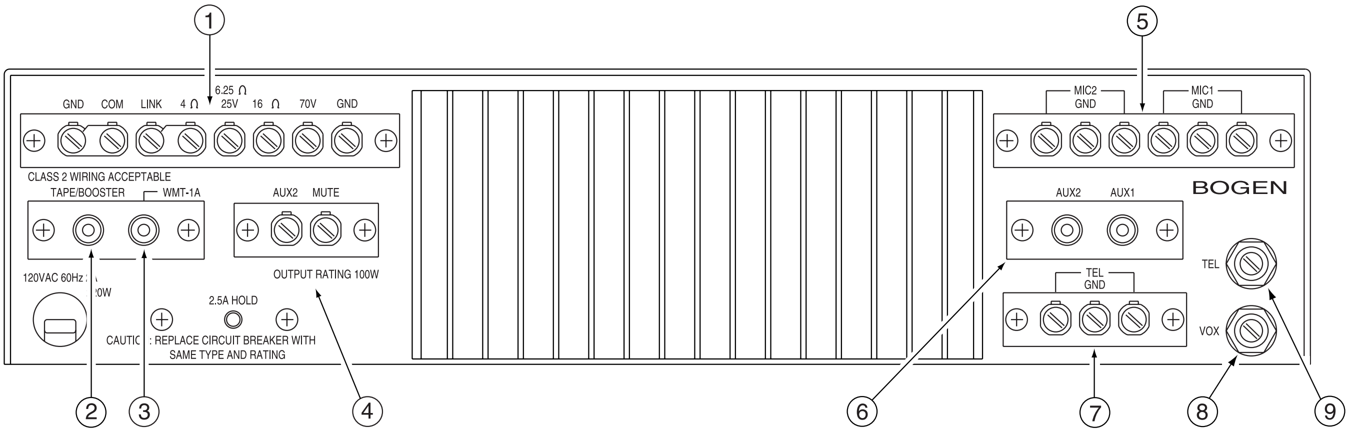
6. Bass Control

Controls the amount of cut or boost of bass frequencies below 100 Hz.

7. Power

AC Power switch. Illuminates when ON.

Classic Series Rear Panel



1. Amplifier Output

Screw terminal strip containing all available speaker outputs.

2. Tape/Booster

RCA unbalanced signal level/output.

3. WMT1A

RCA output connection for Bogen's 600-ohm balanced line matching transformer Model WMT1A.

4. AUX Terminal

Screw terminal connection that allows externally controlled muting of AUX inputs with a contact closure.

5. Microphone Inputs

Screw terminal strip containing the MIC1 and MIC2 balanced, low-impedance inputs.
(MIC2 is switch-selectable.)

6. Auxiliary Inputs

RCA unbalanced, AUX1 and AUX2 high-impedance inputs. (AUX1 is switch-selectable.)

7. TEL Input

Screw terminal input for 600-ohm balanced telephone signal.

8. VOX SENS Control

Variable control for adjusting TEL input signal level trigger point for automatic muting of Aux input.

9. TEL Volume Control

Adjusts the telephone input paging level.

Installation

Package Contents

• Classic Series Amplifier

• Instruction Manual

Ventilation

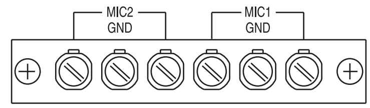
When using a shelf or table mount, the amplifier should stand alone with no equipment on top of it or below it. If the amplifier must be stacked with other equipment, care must be taken to ensure that all the minimum clearance distances (½") are met and that the equipment below the amplifier produces little significant heat.

Rack Mounting

A rack mount bracket kit (Model RPK50) is available as an accessory. (Not included.)

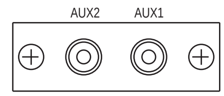
Input Connections

Microphone Connections



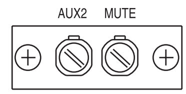
These inputs are for two low-impedance balanced dynamic microphones. Connect cable shield to center screw marked "GND."

Auxiliary



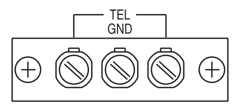
The AUX inputs provide unbalanced RCA inputs for connection to external signal-level equipment.

AUX Muting



For this function, a customer-supplied, normally-open contact closure (switch) must be connected to the AUX 2 MUTE terminals. When the contacts are closed, the AUX 2 input will be muted. Typically activated by a switch in a push-to-talk style microphone. AUX 1, if selected, is not mutable by contact closure.

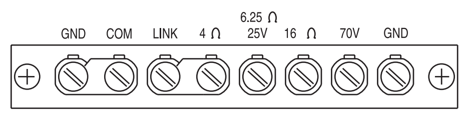
TEL



Connect the telephone line to the two outside terminals and the shield, if used, to the center terminal. TEL input signal will trigger automatic muting of AUX 1 and AUX 2. Input impedance is 600-ohm and is transformer balanced. Input is for "Dry" audio signals only, no DC voltage on the signal.

Output Connections

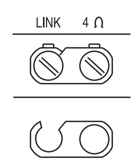
Speakers, General



The amplifier may be used with most conventional speaker systems. Connect one speaker lead to the screw terminal that corresponds to the impedance of the type of speakers used in the system and the other lead to the COM terminal. If the line is shielded, connect the shield to GND.

Connecting the GND to the COM terminal when using the transformer-coupled outputs references the transformer output to ground. Disconnecting the GND terminal from COM allows the transformer output to float electrically. This is sometimes useful under certain conditions where a ground connection is undesirable. It is generally a good idea to short the GND to the COM terminal regardless of output type (Trans or Direct).

Speakers, Low-Impedance

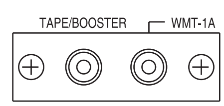


To connect a 4-ohm speaker, remove the the 4-ohm link and connect the speaker between 4-ohm and GND.

Tape/Booster Connection

To tape record the amplifier program, connect a patch cord from the TAPE/BOOSTER output jack to the input of a tape recorder. Can also be connected to the input of a booster amplifier.

WMT1A Connection



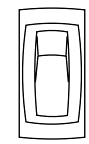
This output jack is directly connected to the 25V speaker tap and permits the connection of Bogen's general-purpose matching transformer (WMT1A). The WMT1A steps the signal down by a 5:1 ratio, giving you a 600-ohm balanced signal that can drive long cable runs.

Operation

Front Panel Controls

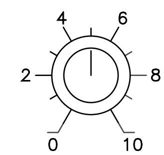
Power

The front panel ON/OFF switch applies power to the amplifier and is illuminated when power is ON.



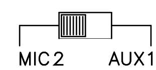
Input Volume Controls

Each input module may be individually controlled by its corresponding volume control knob.



MIC2, AUX 1 Mode Switch

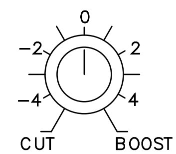
Activates the corresponding input that it is switched to - MIC2 or AUX1. The other input is inactive and any connections to the inactive input will not work.



Bass and Treble Controls

The Bass and Treble controls are used to adjust the tonal balance of the amplifier output. The center position of these controls provides flat frequency response. Counterclockwise rotation of these controls reduces the bass or treble response, while clockwise rotation increases such response.

The treble control has a cut/boost range of +/- 11 dB at frequencies above 10 kHz and provides a roll off after 20 kHz to reduce gain above the audio range.



The bass control has a cut/boost range of +/- 11 dB at frequencies below 100 Hz. When driving speakers using the direct-coupled output terminals, the bass filter's response is flat to 20 Hz.

Rear Panel Controls

TEL Volume Control

The TEL VOLUME control on the rear panel adjusts the TEL input's paging level. It does not affect the microphone level. Rotate the control counter-clockwise to decrease the level. Rotate the control clockwise to increase the level.



VOX SENSitivity Control

When an input signal (such as voice) is detected through the TEL input, the music channels (AUX1 and AUX2) will be muted. The VOX SENSitivity control should be set so that only the desired signal is above the threshold level, while noise and unwanted signal is below it. To adjust the sensitivity of this circuit:



1. Rotate the control fully clockwise. While making a page announcement and talking at a low level, the sound should not be choppy nor missing parts of words. If it is choppy, or if intelligibility is poor, rotate the control counterclockwise to the point where the sound is clear and crisp (but not to the maximum counterclockwise position).
2. If the background music shuts down when no page is in progress, rotate the control clockwise until the music is restored.

Specifications

Power Output (RMS)	
C35:	35W
C60:	60W
C100:	100W
Frequency Response & Distortion	
Transformer†:	70 - 16 kHz (± 2 dB) @ 1% max.
4-Ohm Direct Output:	20 - 20 kHz (± 1 dB) @ 0.5% max.
Hum and Noise	
MIC Input:	55 dB below rated output
AUX Input:	70 dB below rated output
TEL Input:	70 dB below rated output
Tone Control Action	
Bass:	+/- 11 dB @ 100 Hz
Treble:	+/- 11 dB @ 10 kHz
Input Sensitivity	
MIC Lo-Z Balanced:	600 µV
AUX:	85 mV
TEL:	75 mV
Outputs	8, 16 ohms, 25V, and 70V transformer-isolated balanced or unbalanced; 4 ohms direct unbalanced
Output Connections:	Speaker screw terminal strip, TAPE/BOOSTER jack; WMT1A jack
Input Connections:	(2) MIC Lo-Z terminals; (2) AUX Hi-Z jacks, Tel
Controls:	MIC1, MIC2/AUX1 (switch selected), AUX 2, BASS, TREBLE, TEL, VOX
Power Requirements:	120V AC, 60 Hz
AC Line Draw	
C35:	85W
C60:	148W
C100:	220W
Dimensions:	14½" W x 3¾" H x 11" D (all models)
Product Weight	
C35:	16 lb.
C60:	18 lb.
C100:	20 lb.

† Measured @ 2 dB below FRP

All specifications subject to change without notice.

PROBLEM	CONDITION	CAUSE
NO SOUND	Power Switch Indicator is OFF.	• Amplifier not plugged in. • AC outlet dead. • Power switch off. • Circuit breaker tripped.
	Power Switch Indicator is ON.	• No signal from source. • Volume turned down. • Speakers not connected correctly. • Link jumper not set correctly (pg. 5).
DISTORTED SOUND	Power Switch Indicator is ON. Volume Controls are turned up. Unit is extremely hot. Little volume.	• Partial short on the output. Check speakers and wires.
	Power Switch Indicator is ON. Volume up. Good volume.	• Signal from source is already distorted. • Input signal too large for input type (reduce signal level applied to input). • Poor speaker connections. • Transformer output load on wrong tap. • Bass control boosted too much. • Output too great for speakers, reduce level.
POOR LOW FREQ. RESPONSE (NO BASS)	Power Switch Indicator is ON. Volume controls are in normal, operational position.	• Speakers wired out of phase. • Bass control set to cut side *Note: Transformer-coupled speakers have less bass response.*
NOISE/HUM	Power Switch Indicator is ON. Volume controls are in normal, operational position.	• Poor electrical connections at input. • Shields of cables not connected. • Input cable routed near AC cables, power transformer, or other EMI radiating devices. • Electrically noisy devices operating on the same AC circuit. • Poor equipment grounding. - *Ensure that all AC safety grounds are connected.* - *Make sure that all components in audio chain are tied to the same ground.*

Warranty

Bogen Classic Series Amplifiers are warranted to be free from defects in material or workmanship for two (2) years from the date of sale to the original purchaser. Any part of the product covered by this warranty that, with normal installation and use, becomes defective will be repaired or replaced by Bogen, at our option, provided the product is shipped insured and prepaid to: Bogen Factory Service Department, 50 Spring Street, Ramsey, NJ 07446, USA. The product will be returned to you freight prepaid. This warranty does not extend to any of our products that have been subjected to abuse, misuse, improper storage, neglect, accident, improper installation or have been modified or repaired or altered in any manner whatsoever, or where the serial number or date code has been removed or defaced.

THE FOREGOING LIMITED WARRANTY IS BOGEN'S SOLE AND EXCLUSIVE WARRANTY AND THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY. BOGEN MAKES NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED TO THE MAXIMUM EXTENT ALLOWABLE BY LAW. Bogen's liability arising out of the manufacture, sale or supplying of products or their use or disposition, whether based upon warranty, contract, tort or otherwise, shall be limited to the price of the product. In no event shall Bogen be liable for special, incidental or consequential damages (including, but not limited to, loss of profits, loss of data or loss of use damages) arising out of the manufacture, sale or supplying of products, even if Bogen has been advised of the possibility of such damages or losses. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

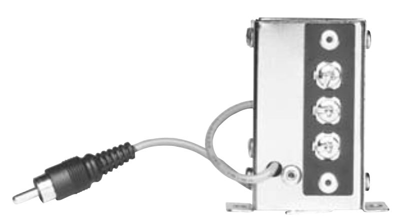
Products that are out of warranty will also be repaired by the Bogen Factory Service Department -- same address as above or call 201-934-8500. The parts and labor involved in these repairs are warranted for 90 days when repaired by the Bogen Factory Service Department. All shipping charges in addition to parts and labor charges will be at the owner's expense. All returns require a Return Authorization number.

Accessories



RPK50 - Rack Mounting Kit

- Adapts Classic Series amps (Models C35, C60, and C100) for 19" rack mounting, 2 rack spaces (3-1/2")
- Heavy gauge steel construction



WMT1A - Matching Transformer

- Hi-Z, 10k-ohm primary impedance
- Lo-Z, 600-ohm secondary impedance, balanced with center tap
- Matches high-impedance unbalanced or low-impedance balanced signals
- Jumper selection allows line level signal to microphone level signal conversion

BOGEN®
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